

REMARKS

I. INTRODUCTION

Claims 1-14 and 16-22 are pending in the present application.

Claim 22 stands rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,463,464 to Ladewski ("Ladewski"). Claims 1-5, 8-9, 14, 16-18, 20 and 22 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,745,238 Long et al. ("Long"). Claims 1-2, 4-7, 10-13, and 19-21 stand rejected under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 6,134,955 to Han et al. ("Han") in view of U.S. Patent No. 5,441,343 to Pylkki ("Pylkki").

II. FINALITY OF OFFICE ACTION

Applicant respectfully requests that the finality of the pending Office Action be withdrawn since it was based on a new ground of rejection (See Office Action, paragraph 6). The M.P.E.P. at section 706.07(a) states that a second or subsequent action on the merits shall be final -- except where the examiner introduces a new ground of rejection that is neither necessitated by applicant's amendments of the claims nor based on information submitted in an information disclosure statement.

It is respectfully submitted that the new ground of rejection was not necessitated by Applicant's amendments nor based on information submitted in an information disclosure statement. In the previous amendment of May 5, 2003, several claims including claims 1, 5, 6, 7, 11, and 16 were amended. In that amendment, these claims were amended to better clarify the subject matter claimed in response to a § 112 rejection, and the features added to independent

claim 1 were already present in the application in dependent form. No new matter was added and no new issues were raised. In particular, the features previously added to independent claim 1 were like those of canceled claim 15. Thus, these features were merely placed in independent form and did not necessitate the new ground of rejection. Accordingly, the finality of the present office action is not sustainable, and it is therefore respectfully requested that the finality of the Office Action be withdrawn.

III. REQUEST FOR PROPER OR CORRECTED DRAWINGS

Applicant thanks the Examiner for approved the proposed drawings correction filed on May 8, 2003. Enclosed herewith, are corrected drawings. Entry and approval of the drawings is respectfully requested.

IV. REJECTION OF CLAIM 22 UNDER 35 U.S.C. § 102(b)

Claim 22 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Ladewski. Claim 22 has been amended to better clarify the subject matter of the claim. No new matter has been added. It is respectfully submitted that Ladewsky does not anticipate amended claim 1 for at least the following reasons.

Claim 1 as presented relates to a device for testing a material that changes shape when an electric or magnetic field is applied. In particular, claim 1 recites that the device includes a generator for applying an electric or magnetic field to the material to produce a change in shape or size of the material.

It is respectfully submitted that Ladewsky does not disclose a generator that applies an electric or magnetic field to produce a change in shape or size of the material. Rather, Ladewsky merely discloses an

electromagnetic radiation source 32 that is directed onto a test object surface 12 and reflected back to an image sensor 34 so that deviations of the test object surface 12 can be determined from a preselected nominal surface geometry. (See Ladewsky, col. 5, line 57 to col. 6, line 10). In this regard, the radiation is not described as producing a change in shape or size of the test object 14 or its surface 12. Indeed, the test object 14 is not even disclosed as changeable when an electric or magnetic field is applied. Accordingly, for at least these reasons it is respectfully submitted that claim 22 is not anticipated by Ladewsky. Withdrawal of this rejection of claim 22 under 35 U.S.C. § 102(b) as anticipated by Ladewsky is, therefore, requested.

**V. REJECTION OF CLAIMS 1-5, 8-9, 14, 16-18, 20,
and 22 UNDER 35 U.S.C. § 102(b)**

Claims 1-5, 8-9, 14, 16-18, 20, and 22 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Long. It is respectfully submitted that Long does not anticipate any of these claims for at least the following reasons.

Claim 1 recites the following:

A device for testing a material that changes shape when at least one of an electric field and a magnetic field is applied, comprising:

a generator for generating at least one of the electric field and the magnetic field and applying the at least one of the electric field and the magnetic field to the material;

at least one thermal sensor for detecting a change in temperature of the material associated with the at least one of the electric field and the magnetic field; and

a measurement unit for measuring a change in shape of the material after the at least one of the electric field and the magnetic field is applied.

Long, by contrast, fails to identically disclose these limitations of claim 1. In particular, Long does not disclose a device for testing a material that changes shape when an electric or magnetic field is applied. Rather, Long discloses an apparatus to allow standard optical inspection and measurement techniques to be used on specimens where the surface of the specimen is not optically suitable for such inspection or measurement, in particular, by temporarily conforming a flexible foil or membrane to the surface (using a suction pressure) in order to temporarily enhance its optical properties **without distorting the original physical surface topology**. (See Long, col. 3, line 56 to col. 4, line 3). Indeed, such a desire not to distort the original surface topology is an explicitly stated purpose of the Long invention. (See Long, col. 2, lines 40 to 44).

The Office Action asserts on pages 2 to 3 that lines 9 to 15 of column 4, and line 62 of column 6 through line 4 of column 7, disclose a generator for generating an electric or magnetic field that applies the field to the material to be tested. However, lines 9 to 15 of column 4, and line 62 of column 6 through line 4 of column 7, merely disclose **properties** of so-called "smart films" and "smart liquids" (i.e., "smart liquids" contain small particles of iron that are influenced by an external magnetic field) but do not disclose a generator that applies an electric or magnetic field to the specimen 22.

The Office Action also asserts on page 3 that Long discloses a temperature sensor 27 and IR camera 24 which detect a change in temperature of the material to be tested,

that is associated with the electric or magnetic field. However, such an assertion is necessarily without basis since nowhere in the Long reference is it discussed that the temperature of the specimen 22 is associated with an electric or magnetic field. Indeed, as earlier put forth, the Long reference does not even discuss applying an electric or magnetic field to the specimen 22.

The Office Action still further asserts on page 3 that computer 25, as disclosed in Long under column 5, lines 58 to 62, measures a change in shape of the material to be tested after an electric or magnetic field is applied. However, lines 58 to 62 merely disclose use of the computer 25 to compare and store surface images but do not disclose measuring a change in shape of the specimen after an electric or magnetic field is applied. Indeed, a change in the shape of the specimen 22 is never discussed.

To reject a claim under 35 U.S.C. § 102(b), the Office must demonstrate that each and every claim limitation is contained in a single prior art reference. (See *Scripps Clinic & Research Foundation v. Genentech, Inc.*, 18 U.S.P.Q.2d 1001, 1010 (Fed. Cir. 1991)). Still further, not only must each of the claim limitations be identically disclosed, an anticipatory reference must also enable a person having ordinary skill in the art to practice the claimed invention, namely the claimed subject matter of the claims, as discussed above. (See *Akzo, N.V. v. U.S.I.T.C.*, 1 U.S.P.Q.2d 1241, 1245 (Fed. Cir. 1986)). In particular, it is respectfully submitted that, at least for the reasons discussed herein, the reference relied upon does not identically disclose all of the limitations of claim 1, and further more, would not enable a person having ordinary skill in the art to practice the subject matter of the claims as presented. Accordingly, for at least these

reasons it is respectfully submitted that claim 1 is not anticipated by Long.

Claim 22 recites features analogous to claim 1, and claims 2-5, 8-9, 14, 16-18, and 20, depend, either directly or indirectly, from claim 1 and therefore include all of its limitations. Accordingly, claims 2-5, 8-9, 14, 16-18, 20, and 22 are likewise not anticipated by Long for at least the same reasons that claim 1 is not anticipated by Long. Withdrawal of the rejection of claims 2-5, 8-9, 14, 16-18, 20, under 35 U.S.C. § 102(b) as anticipated by Long is, therefore, requested.

VI. REJECTION OF CLAIMS 1-2, 4-7, 10-13,
and 19-21 UNDER 35 U.S.C. § 103

Claims 1-2, 4-7, 10-13, and 19-20 stand rejected under 35 U.S.C. § 103(a) as being obvious over Han in view of Pylkki. It is respectfully submitted that Han in view of Pylkki does not render obvious any of these claims for at least the following reasons.

Han purportedly discloses a scanning probe microscope for generating a signal corresponding to the surface characteristics of a scanned sample. (See Han, Abstract). Han does not disclose that the sample changes shape, or is even capable of changing shape, when an electric or magnetic field is applied. Accordingly, Han necessarily fails to disclose a device for testing a material that changes shape when an electric or magnetic field is applied, as recited in claim 1.

The Office Action asserts on page 4 that the sample 54 is inherently piezoelectric. However, such an assertion lacks any basis or support. Indeed, if it is the intention for the Han microscope to make a topographical map of the surface features of the sample 54, it is unclear how

changing the shape of the sample 54 would provide any benefit, and may, in fact, render the microscope inoperable. In this regard, to the extent that the Office Action is essentially relying on the inherency doctrine, it is respectfully submitted that to rely on inherency, the Examiner must provide a "basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristics necessarily flows from the teachings of the applied art." (See M.P.E.P. § 2112; emphasis in original; and see *Ex parte Levy*, 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Int'l. 1990)). Moreover, the M.P.E.P. and the case law make clear that simply because a certain result or characteristic may occur in the prior art does not establish the inherency of that result or characteristic. In this regard, it is respectfully submitted that the Office has not adequately demonstrated that sample 54 is inherently piezoelectric.

The Office Action also asserts on page 4 that lines 19 to 35 of column 5 of Han disclose a generator for applying an electric or magnetic field to the sample 54. However, lines 19 to 35 of column 5 merely disclose that a magnetic field B is generated perpendicular to the soft axis of a cantilever 48 for the purpose of modulating the position of the tip 64 of the cantilever 48. Whether or not such a field B is applied to the sample 54 is never disclosed. Indeed, there is no purpose for applying a magnetic field to the sample 54.

The Office Action also asserts that lines 39 to 60 of column 5 of Han disclose a measurement unit for measuring a change in shape in the sample 54 after the electric or magnetic field is applied to the sample 54. However, lines 39 to 60 of column 5 merely disclose a mathematical formula combining sinusoidal reference and modulation signals that

are used to control an adjustment in position of the tip 64 of the cantilever 48. How such a mathematical formula relates to an electric or magnetic induced change in the sample 54 is not disclosed. Indeed, as earlier put forth, Han does not discloses that the sample changes shape, or is capable of changing shape, whether in the presence of an electric/magnetic field or not.

Pylkki purportedly discloses a scanning thermal probe microscope that measures the temperature of surface contours of a specimen, in which the sensor portion of the microscope is heated or cooled to compensate for any heat transfer between the microscope and the sample so that the sensor is maintained at a constant temperature. (See Pylkki, Abstract). It is respectfully submitted that Pylkki does not cure the critical deficiencies of Han as discussed above. Indeed, the Office Action merely uses Pylkki to assert disclosure of the use of a thermocouple. Accordingly, even if were proper to combine references as suggested (which is not conceded), it is respectfully submitted that such combination does not disclose all of the limitations of claim 1, and therefore claim 1 is not rendered obvious by their combination. In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974) (prior art reference(s) must teach or suggest all of the claim limitations).

Moreover, it is respectfully submitted that the Examiner's asserted suggestion that it would be obvious to combine the Han and Pylkki references "in order to allow combining thermal profiling with topography of the sample" is improper since such an assertion is merely a suggestion on the part of the Examiner and lacks any supporting basis in either Han or Pylkki. In re Vaeck, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991) (The teaching or suggestion

to make the claimed combination must be found in the prior art and not based on the application disclosure).

Accordingly, the required motivation or suggestion to combine the teachings of Schultz with the teachings of Fujiwara is lacking.

Claims 2, 4-7, 10-13, and 19-21 depend, either directly or indirectly, from claim 1 and therefore include all of the limitations of claim 1. Accordingly, claims 2, 4-7, 10-13, and 19-21 are likewise not rendered obvious for at least the same reasons claim 1 is not rendered obvious.

In re Fine, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988) (any dependent claim that depends from a non-obvious independent claim is non-obvious).

In view of the foregoing, it is respectfully submitted that Han in view of Pylkki does not render obvious any of claims 1-2, 4-7, 10-13, and 19-21. Withdrawal of the rejection of these claims under 35 U.S.C. § 103 over Han in view of Pylkki is, therefore, requested.

VII. CONCLUSION

It is respectfully submitted that all pending claims are in condition for allowance. Passage to issuance is, therefore, requested.

Respectfully submitted,

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